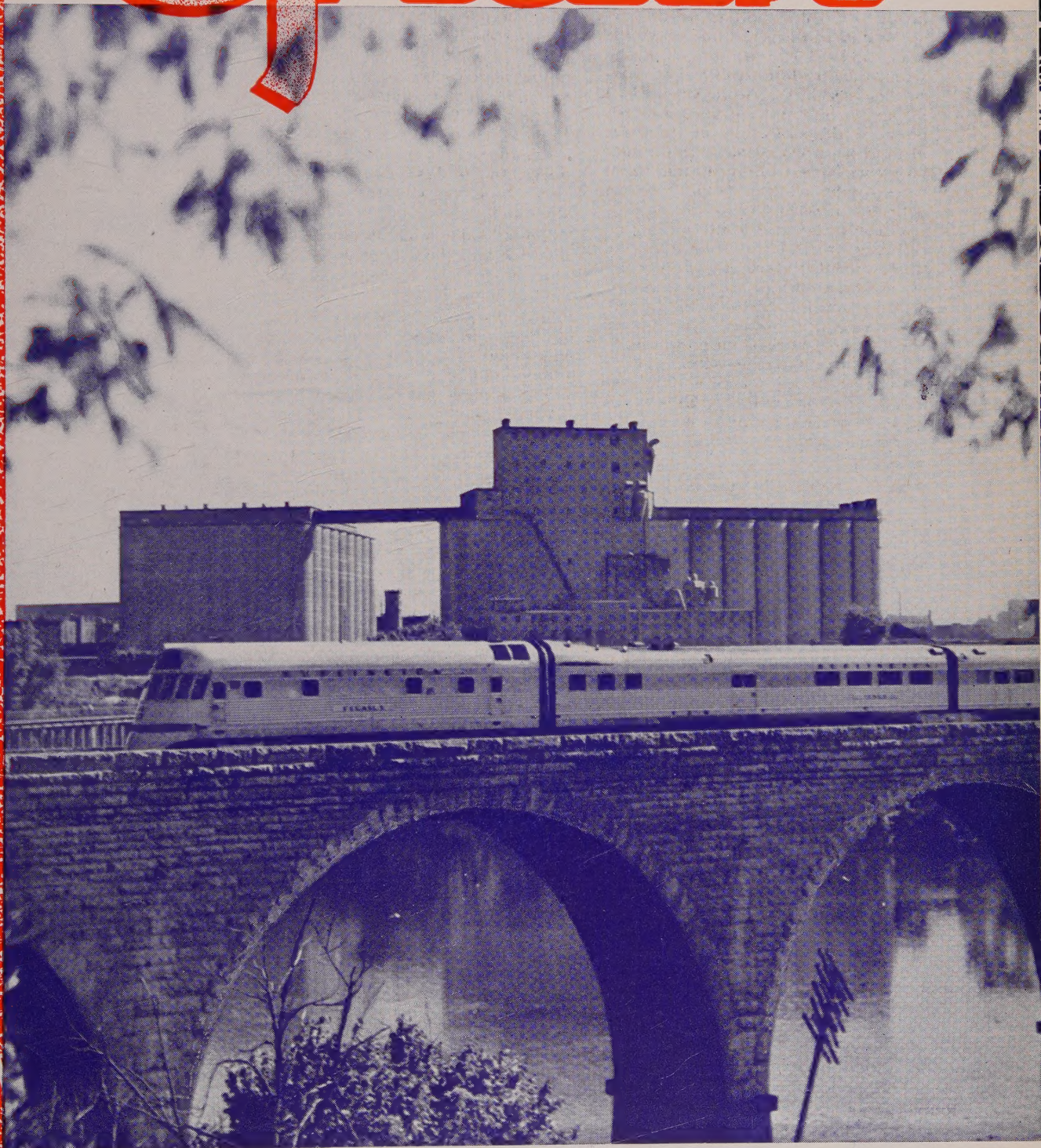


# Grain



A Picturesque View at Minneapolis

NOVEMBER

1939



# Lowering Tariffs Seen as Farm Cure

H. G. L. Strange, writing for the Searle Grain Co., Ltd., of Winnipeg, Canada, has some very interesting and pertinent remarks about the present world situation in wheat. In his article, the writer said:

THE writers make it appear, either by direct statement or by inference, that the world is suffering from an unprecedented glut or surplus of wheat, and that there is no demand for this great excess. We are told that the surplus has been brought about by two factors: first the failure of wheat growers to reduce acreage as it became apparent that wheat was being produced in excess quantities, and secondly by the high tariffs and other restrictions against the importation of wheat set up by the wheat importing countries of the world, all because of the desire of these importing countries to persuade their own farmers to produce the wheat necessary for all their people with the object of avoiding importations.

The only alternative left, therefore, suggest these writers, is for the farmers in the wheat exporting countries to reduce immediately their wheat acreage to accord with the present restricted world demand.

Are these the true underlying factors that have brought about the present situation? Is the surplus or so-called "glut" as large as we are led to believe? Is the reduction of wheat acreage by Canada and by other wheat exporting countries the proper solutions?

LET us consider some of the facts. The truth is, that the whole world produces and consumes each year in round figures about 5,400 million bushels of wheat, and the excess or burdensome surplus which now forms, what is termed by some, "The Great Glut of Wheat" consists of only about 550 million bushels, or about one-tenth only of the world's annual actual use, or sufficient wheat for only thirty-seven days' consumption by the people of the world.

Thirty-seven days' supply is not a great margin of safety of course, and, as has often happened in the past with surpluses of similar size per capita, nature, with a slight change of her conditions in some important part of the world, could easily reduce crops so that this present burdensome surplus would become needed, and so would disappear in a few short months. There are actual records of similar surpluses that have accumulated in the past. At the end of the Napoleonic wars, for instance, there was a wheat surplus quite as large per capita as the present one, and a Royal Commission was appointed to see what might be done with it. The evidence given by various persons before this British Royal Commission is available. Mr. William Stickney for instance, a farmer of England, gave in 1821 the following advice to the Royal Commission:

"Desperate cases require desperate remedies: I can see no immediate remedy for our case, which is, indeed, desperate, but for the government to immediately buy up a considerable part of the surplus of grain, at present before the market, and store it until the consumption calls for it at better prices; or what would be still better, send it to our colonies or elsewhere."

We all remember the great surplus of wheat which was present in the world in 1933 and 1934, and which was quite as large as the present surplus, and then we remember that only three years afterwards, i.e., in 1937 many feared there would be a definite scarcity of wheat in the world.

These lessons teach us unquestionably that wheat surpluses build up and disappear much quicker than most people consider possible.

IT is interesting to realize that since 1934, when a similar wheat surplus was present in the world, the world has consumed, during these five years, **every bushel of wheat that the whole world has produced**, and yet in 1933 the London Wheat Committee suggested that the only hope left to reduce the then existing surplus was for wheat growers to reduce acreage. If that advice had been followed the world would have suffered severely between 1934 and 1938 because of a lack of sufficient wheat.

We know on undeniable authority for every unwanted surplus of wheat now existing in the world, there is somewhere a human mouth sadly needing it for proper nourishment. This is confirmed by the investigations of the League of Nations on nutrition whose report published two years ago, reads as follows:

## HOW ABOUT TORONTO?

HOW about the Toronto convention? Asks Bill Kritter of Milwaukee along with dozens of others interested in attending next year's conference, relates National President T. C. Manning.

Plans are already getting under way for another of the Society's outstanding conventions at the Royal York on April 1-3, with Sunday, March 31, set aside for the usual preliminary activities.

So far every convention held in Toronto has shown a goodly increase in attendance over that of the preceeding gathering, which augurs well for the Supers, thinks President Manning.

"We have shown that in countries of the most diverse economic structure, and general level of consumption, appreciable sections of the population are, for one reason or another, failing to secure food which is essential to their health and efficiency. Millions of people in all parts of the globe are either suffering from inadequate physical development, or from disease due to malnutrition, or are living in a state or subnormal health, which could be improved if they consumed more or different food.

"That this situation can exist in a world in which agricultural resources are so abundant, and the arts of agriculture have been so improved that supply frequently tends to outstrip effective demand, remains an outstanding challenge to constructive statesmanship and international co-operation."

In view of this situation, it seems incredible that countries badly needing food would deliberately place hindrances in the way of its importation, unless it was that these countries had no alternative.

INVESTIGATION reveals that the wheat importing countries actually had no alternative, and that they were forced to limit the amount of wheat they purchased, for the simple reason that the wheat exporting countries themselves had restricted, by means of high tariffs and other devices, the amount of goods which they would accept from their wheat customers overseas, and which goods were the only form of money their wheat customers had.

Considering the great need for additional food in the world today, obviously, then, what is needed is not a further restriction of the already insufficient supplies of food stuffs, but simply that governments, particularly those of the wheat exporting countries, should lower existing high tariffs, and should remove other harmful restrictions to international trade which today actually prevent untold millions of people from securing the necessary food stuffs and other raw materials they require.

To place hindrances, directly or indirectly, in the way of large numbers of people selling their own goods on world markets, and so in turn to make it difficult for these people to purchase the wheat and other food stuffs they so badly need, not only impoverishes the producers, but also causes suffering among the industrial workers and others who live in town and cities abroad, and therefore does not seem to be in accordance with the dictates of humanity, nor in keeping with the principles of simple Christianity.



# Editorial



## YOU OWE IT TO YOURSELF

No injury resulting in broken skin can be looked upon as a minor one, authorities contend, but the habit of so many people is to neglect these so-called minor injuries, too frequently to their regret. Minor injuries constitute the great majority of all mishaps in industry and they should be given immediate attention.

Men who make light of cuts and bruises learn, only through their own experience the value of immediate attention to wounds of all kinds, no matter how trivial they may seem to be. They are forcibly reminded of their mistake in neglecting to report an injury when a dangerous infection sets in, and they are subjected to pain and loss of time. Such experience is unnecessary.

"Why does a man neglect a small cut, "is the question put in an article in *The Otis Sheet*." In one case perhaps he feels that his buddies will think that he 'can't take it.' Another man may not report at the dispensary because it takes too much time from his work and may, in some cases, affect his earnings. Or he may object because he has to give his 'life history' every time he gets a mere scratch.

"None of these reasons stand the test of ordinary 'horse sense' when the consequences of neglect may be a serious infection, resulting, at least, in a temporary loss of earning power.

"In 1934, there were 28,814 accidents in North Carolina, resulting in a loss of 250,519 days from work, an average of nine days per case. Among these accidents were 83 cases of infection, involving



a total loss of 936 days, or an average of 11½ days per case—two and a half days more than the average of all injuries.

"We not only urge, but implore you to take the sensible course in the matter of so-called minor injuries and report to your dispensary without delay for proper treatment. You owe it to yourself to do this."

---

{GRAIN, Board of Trade, 141 W. Jackson Boulevard, Chicago; Phone WABash 3111. A forum for operative and mechanical problems in the larger grain and grain processing elevators. Published monthly on the tenth. \$1 per year.}



**... Here Are The Simple  
Suggestions For Using The  
Recently Announced  
SAFE-EASY-SURE  
WEEVIL-CIDE  
APPLICATOR,  
.. So Ideal For  
Treating Cars,  
Grain Streams  
and Bins**



Equal portions of Weevil-Cide should be applied in each half of the car. It is sometimes advisable to divide the dosage into equal parts before applying. This is especially true when using the newly developed extension rod and treating from the ground, as illustrated.

Where large amounts of Weevil-Cide are used in bin treatment of 10,000 bushels or more the operator (using the extension rod with nozzle removed) can zig-zag a stream of Weevil-Cide across the grain stream as the grain enters the bin instead of using a sprinkling can, as previously recommended. This allows the operator to stand farther away from the dust

and fumes carried by the displaced air—which heretofore made the task of fumigating disagreeable.

When applying the top or last portion of Weevil-Cide by the regular pouring-on-the-grain method it is often difficult to gauge the flow of grain with the pouring of the liquid. This sometimes results in running out of Weevil-Cide before all the grain has been run into the bin. By using the pump a portion of Weevil-Cide can be held back until the bin is filled—and this last reserve portion can then be pumped on top. This results in a more evenly distributed dosage over the surface—which was not feasible when pouring from a sprinkling can (this sometimes accounted for incomplete kill on the surface).

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Your Friend in Need,

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# CONTROL OF DUST EXPLOSIONS IN INDUSTRIAL PLANTS

By HYLTON R. BROWN, Senior Engineer,

Chemical Engineering Research Division,  
Bureau of Chemistry and Soils, U. S. Department of Agriculture, Washington, D. C.

WITH very few exceptions, any dust which will burn or oxidize readily and is fine enough and dry enough to form a cloud in air will explode if the concentration is within certain limits and there is present a source of ignition sufficiently hot to ignite it.

Starch, grain dust, wood dust, powdered sugar, cork dust, soap powder, rosin dust, coal dust, sulphur and aluminum powder are representative types of the dusts which have been found to be explosive. For the more explosive dusts a concentration of .02 to .04 of an ounce per cubic foot of air forms an explosive mixture and a temperature of 540° C. is sufficient to ignite it. Tests to determine the pressure produced by dust explosions have been made with many different dusts in the laboratories of the Chemical Engineering Research Division of the Bureau of Chemistry and Soils in the U. S. Department of Agriculture. The maximum pressure, average rate of pressure rise and the maximum rate of pressure rise for 133 of these dusts at different concentrations have been reported by Paul W. Edwards and L. R. Leinbach in U. S. Department of Agricultural Technical Bulletin No. 490.

In large scale tests pressures of over 100 pounds per square inch were recorded and reports have been received indicating that pressures of over 200 pounds per square inch were measured during tests made in Europe. Observations made at industrial plants in this country following dust explosions have indicated that it is impractical to build walls strong enough to withstand the pressures produced. In one case a sixteen inch reinforced concrete wall was blown out by the explosion and in a grain elevator explosion a section of the concrete storage tanks with their contents estimated to weigh more than 100,000 tons was lifted at least a foot and moved sideways on its foundation about 8 inches.

The dust explosion hazard exists in thousands of the industrial plants and each year explosions in these plants cause heavy life and property losses. More than 300 persons have been killed and more than \$35,000,000 worth of property has been destroyed in dust explosions in this country during the last twenty years. The

plants in which these explosions occur are not always old and poorly operated. In fact most of the recent losses have occurred in what would be considered modern, well equipped and efficiently operated industrial establishments. The hazard must be recognized and protective measures adopted to reduce or prevent such losses.

## *Prevention First*

OF course explosion prevention should be our first thought. We have learned to build fire resistive buildings and give much attention to fire prevention, but we still provide fire extinguishers and fire protection equipment in our plants. The same procedure should be followed in combating the dust explosion hazard. Knowing the requisites of a dust explosion—a dust cloud and source of ignition—all possible precautions should be taken to prevent the formation of dust clouds and to eliminate possible sources of ignition.

Cleanliness has always been and continues to be the best and easiest precaution to take in providing dust explosion protection. Considerable progress has been made in developing effective dust collecting equipment and the use of such equipment wherever practical provides protection for many processes in many different types of plants.

To some extent it is also possible to eliminate sources of ignition. Explosion-proof electrical equipment is now available and can be used to eliminate the electric spark or arc as a possible ignition source. Non-sparking tools and machine parts are obtainable and their use will greatly reduce the possibility of a dust ignition by metallic sparks. It may be interesting to note that at the U. S. Department of Agriculture Dust Explosion Testing Station at Arlington, Va., both sulphur dust clouds and aluminum dust clouds have been ignited by sparks from a piece of steel held against an emery wheel. Static electricity can be eliminated as a possible source of ignition by proper grounding of belts and moving parts of machinery.

## *Inert Gas*

THE above suggestions may provide sufficient protection where the dust produced is a by-product and can be collected and removed and the sources

of ignition are recognized. In plants where the dust or powdered material is the product being manufactured other precautions are necessary. In such cases it becomes particularly important to guard against ignition of the product during processing. The use of inert gas such as carbon dioxide or nitrogen has been found very effective for both fire and explosion prevention where it can be used to reduce the oxygen content of the atmosphere within the grinding, bolting or conveying equipment in which the material is being processed. The oxygen reduction necessary varies for different dusts, but tests have shown that for nearly all of the cereal dusts now generally recognized as explosive, it is impossible to produce an explosion or propagate flame when the oxygen content of the air in which the dust is suspended has been reduced from the normal 21 per cent to 12 per cent. A reduction of 8.5 per cent is necessary to prevent explosions of sulphur dust and it may be necessary to go still lower with other materials.

## *Protection Necessary*

IN addition to all the safeguards previously mentioned, it has been considered desirable in many cases to give consideration to the construction and location of the buildings. This is particularly true in industrial plants where dust clouds or sources of ignition may occur through mechanical failures or conditions beyond the control of the operator.

With the knowledge now available concerning dust explosion pressure, it seems wise to recognize the futility of attempting to build strong enough to withstand the pressure and direct attention to construction features which will help prevent explosions or provide vents if one should occur.

It is seldom practical to separate the type of plant in which the dust explosion hazard exists into widely scattered or segregated units like a powder or explosive manufacturing establishment. It is possible, however, in many cases to divide a building into sections with unpierced fire walls and thus prevent an explosion in one section from propagating to another. The desirability of releasing explosion pressure in the early stages was recognized sometime ago and a room,



gallery and tower were erected at the Arlington, Va., Dust Explosion Testing Station of the U. S. Department of Agriculture expressly for the purpose of determining the relationship between venting area, explosion pressure and the extent of flame propagation.

The Room, 4 x 5 x 5 feet, has a volume of 100 cubic feet. The Gallery, 2½ x 2½ x 20 feet, has a volume of 125 cubic feet. The Tower, 3 x 3 x 18 feet, has a volume of 162 cubic feet. Total volume of the structure is 387 cubic feet.

Vents on the Room consist of hinged metal doors and window sash. The metal doors range in size from 0.1 sq. ft. to 1.55 sq.ft. and the sash contain approximately 3 sq. ft. of glass.

The Gallery has eight roof vents, each 1 sq.ft. in area covered by hinged doors. There are also eight fixed glass windows with an area of 1.3 sq.ft. each. The opening into the Tower, which is the full size of the Gallery, may be closed when the Gallery is used as a unit.

The Tower contains one swinging panel about 7 sq.ft. in area, five hinged doors, each 1.55 sq.ft. in area, adjustable vents on top ranging from 0.1 sq.ft. to full cross sectional area of 9 sq.ft., and six fixed glass windows with an area of 1.7 sq. ft. each.

A series of tests were made at the station to determine, (1) the ratio of venting area to room or building volume to provide safe venting of explosions, (2) suitable types of venting equipment, and (3) the most effective location of vents.

### Required Venting Areas

THE first step in determining the area required for the venting of dust explosions was to select a pressure at which it was believed structural damage would not occur. This, of course, depends upon the type of building to be vented, but for the heavy reinforced concrete type of structure generally used to house the dust-producing industries it is believed that sufficient venting area should be provided to prevent explosion pressure from exceeding 300 pounds per sq. ft.

The results obtained in a series of 66 explosions indicated that it is necessary to provide 1 sq. ft. of venting area for each 80 cu. ft. of volume in order to release at less than 300 pounds per sq. ft. pressure an explosion of grain dust in a cube-shaped or approximately square room.

In a series of 58 explosions it was found that approximately 3 sq. ft. of venting area should be provided for each 100 cu. ft. of volume to safely vent an explosion of starch dust in a cube-shaped or approximately square room.

No extensive series of tests were made with other dusts, but enough information was obtained to indicate the pressures produced in comparison with starch and

grain dust. The results obtained with sugar, wood flour, sulphur, cork, powdered milk, soap powder, wood charcoal and similar products indicated that the venting area required for these dusts ranges between the requirements for grain dust and starch.

### Fixed Glass Vents

IN some cases a lightly placed roof and large free-swinging doors may be considered as vents, but as a rule windows represent the venting area which can be conveniently used for explosion pressure release. Accordingly tests were made to determine the breaking strength of glass in the sizes and types generally used in industrial plants and generally accepted as explosion vents. The following table gives the results of these tests:

Dust Explosion Pressure Necessary to Break Glass

Type of Glass	Size of Pane			
	10" x 14" lbs./sq. ft.	12" x 18" lbs./sq. ft.	14" x 20" lbs./sq. ft.	16" x 24" lbs./sq. ft.
Picture Glass .....		513	368	
Single Strength, A Quality.....		470	392	
Double Strength, A Quality.....	900	637	510	419
⅛" Ribbed .....		270	169	
3/16" Ribbed .....		655	387	
¼" Ribbed .....		Unbroken at 1000	501	
¼" Wired.....		Shattered at widely varying pressures		

It was a surprise to all of the engineers engaged in this work to find that double strength A quality window glass of the size ordinarily used in factory windows was capable of withstanding such high dust explosion pressure. Undoubtedly too much dependence has been placed on fixed glass as a means of venting dust explosions in industrial plants because the results given in the table clearly show that such glass cannot be depended upon to release pressures below the point at which structural damage will occur, except perhaps where the ⅛-inch ribbed glass is used. The 637 pounds per sq. ft. reading for the 12x18 inch double strength glass, a size generally used in factories, means that under such conditions a wall, ceiling or floor 10 x 10 feet would be subjected to a pressure of more than 30 tons. It is quite likely that in such cases the entire window frame would be blown out of its setting at a pressure lower than that indicated as the breaking pressure of the glass, but that is another phase of the venting problem.

There was some indication in the tests that venting of dust explosions through fixed glass might be accomplished at a safe pressure by using larger panes of glass. It will be noted that the 16 x 24 inch glass broke at about two-thirds of the pressure the 12 x 18 inch pane was able to withstand. This plan was not

recommended because it was realized that unusually large panes would be necessary and the changing of existing installations and standardized construction practices would be impractical.

### Scored Glass Vents

THE comparatively low pressure at which the ⅛-inch ribbed glass broke in the tests described above led to another series of tests to determine the effect of scoring fixed glass in window frames to reduce its breaking pressure and thus increase its effectiveness as an explosion vent. It was noted that this particular type of glass broke at a much lower pressure when the panes were installed in the explosion chamber with the ribs on the outside than when they were placed with the ribs on the inside. Similar results

were noticed when plain glass panes were scratched with a glass cutter. The best results were obtained with a diagonal or X scoring with the scratches starting about 2 inches from the corners and with a 2-inch gap in the center. The 2-inch space at the corners and the 2-inch gap in the center prevent cracks from starting along the scratches when such scoring is used on glass in factories where heavy vibration occurs. The tests also showed that scoring with a diamond cutter was more effective than scoring with a steel wheel. The following table shows the reduction in the breaking pressure of plain glass which can be accomplished by scoring:

Comparison of Dust-Explosion Pressures Necessary to Break Unscored and Scored Glass

(Pressure in lbs. per sq. ft.)			
	Size of Pane		
	12 x 18 in.	14 x 20 in.	
Double-strength A quality			
Unscored .....	637	510	
Scored with steel wheel	119	120	
Scored with diamond cutter .....	78	85	

The figures in the above table are based on a limited number of tests and one or two of the results are not in line with the expected trend. The series of tests is being continued and later results may



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be somewhat different. The table shows, however, that it is possible by scoring fixed glass to reduce its breaking strength to the point where it can be used to vent dust explosions and prevent the building up of destructively high pressure. It is interesting to note that scoring the OUTSIDE of fixed glass as recommended greatly weakens the glass against pressure from without.

### Movable Vents

**F**OLLOWING the series of tests to determine the breaking pressure of plain and scored glass an opportunity was presented to compare the merits of the various types of swinging or movable vents. All of these venting devices have particular advantages depending upon the type of structure in which they are used, the cost, and the frequency and severity of the explosions in which they may operate. The outstanding result of the tests was the great advantage which all of the vents tested had over fixed glass in providing quick release at low pressures. Many of these devices which consist of hinged free-swinging or counter balanced panels or window sash can be set to operate at pressures of less than 5 pounds per square foot.

It is not feasible in many cases where fixed glass is now installed to replace the present sash with venting frames. In such cases it is recommended that the glass be scored as previously described or the entire frame be hinged at the top and arranged to swing outward.

### Equipment Vents

**T**HERE are a number of industries in which the explosive dust is confined within the processing equipment. Spray drying chambers, grinding and bolting apparatus and dust collectors are examples of such cases. It is desirable to vent such equipment directly to the outside of the building and where the inclosure or shell of the machine is of light construction, a vent area of not less than 1 sq. ft. for every 30 cu. ft. of volume is recommended. For more substantial equipment having reasonably high bursting strength, a smaller vent can be used. Attention should be given to the design and construction of both equipment and vents to be sure they are capable of withstanding explosion pressure. In many cases special caps and seals are necessary in equipment vents, but where they can be used to prevent the escape of an explosion from a machine into a room where workmen are employed, they may be the means of preventing loss of life, personal injury or heavy property damage.

### Location of Vents

**I**N all of the tests referred to above considerable data were obtained concerning the location and distribution of

## LIKED BULLETIN BOARD PICTURE

**Y**OUR picture in "GRAIN" of the Chicago elevator fire goes up on our picture gallery, and framed, too. We have a photo of every elevator built in Baltimore in the collection, besides snap shots of trucks and drivers who come to our good ol' No. 2. This "roguers" gallery is a source of never failing interest to the truckers and creates a better feeling between the men and us who serve them. The cost is small and worth many times what it costs in creating good fellowship between men.—Frank A. Peterson, Norris Grain Company.

venting areas. It has been found that there is a great advantage in being able to vent an explosion at its source or before the pressure has a chance to build up. Tests at the Arlington Testing Station proved that cubical shaped room with vents or windows on all sides is the type which can be most effectively vented. When explosions were produced in the gallery which was 20 feet long and only 2½ feet wide and high the pressure built up rapidly as the explosion propagated from one end to the other. An explosion in this gallery could be vented without glass breakage through a ½ sq. ft. vent located at the end where the dust cloud was ignited, but if this vent was closed the pressure built up so rapidly that a 2 sq. ft. vent located 20 feet from the source of ignition was not sufficient to vent the explosion without breaking glass. In other words, in a long narrow room it may be impossible to provide sufficient venting area at one end alone to release an explosion before destructively high pressures are reached.

It is for this reason that suggestions



Courtesy Chicago Daily News

have been included in certain safety codes covering the dimensions of rooms in which a dust explosion hazard exists.

### Safety Codes

**T**HE Dust Explosion Hazards Committee of the National Fire Protection Association, formed with the cooperation of the U. S. Department of Agriculture, has prepared safety codes for the prevention of dust explosions covering the hazard in a number of industries and the following completed codes have been approved as American Standard.

1. Safety code for the prevention of dust explosions in starch factories.
2. Safety code for the prevention of dust explosions in flour and feed mills.
3. Safety code for the prevention of dust explosions in terminal grain elevators.
4. Safety code for pulverizing systems for sugar and cocoa.
5. Safety code for the prevention of dust ignitions in spice grinding plants.
6. Safety code for the prevention of dust explosions in wood flour manufacturing establishments.
7. Safety code for the installation of pulverized fuel systems.
8. Safety code for the prevention of dust explosions in coal pneumatic cleaning plants.
9. Safety code for the use of inert gas for fire and explosion prevention.
10. Safety code for the prevention of dust explosions in woodworking plants.

The complete text of these codes has been published by the Bureau of Labor Statistics of the U. S. Department of Labor as Bulletin No. 562 entitled, "Safety Codes for the Prevention of Dust Explosions," and a supplemental bulletin on the same subject, No. 617. Additional detailed codes are in the course of preparation by the committee. Codes covering the dust or dust and gas explosion hazard in coal mines have been formulated by the U. S. Bureau of Mines in co-operation with other agencies.

Many of the studies originally planned to develop methods of controlling dust explosions have not been completed and much additional experimental work will be necessary. The venting area required to release the pressure in explosions of dusts other than those tested should be determined. A study of flame travel during dust explosions in different shaped rooms and a series of tests to determine explosion pressure produced in deep bins or vaults will be desirable. The heavy losses of life and property already caused by dust explosions in different lines of industry are an incentive to carry on work which will aid in reducing or eliminating this hazard.



## CAR PULLER SLIPS

(These reports courtesy Lumbermen's Mutual Casualty Company, Chicago.)

THE ring on the chain hooked to a loaded freight car slipped off and the cable whipped back and struck one of the men of a Montana terminal elevator, causing fractures and lacerations of leg.

After packing a conveyor chain, a Kentucky elevator employee caught his overall sleeve in a small set screw of the wheel and was entangled and whipped 'round and 'round. He suffered injuries that proved fatal.

A scaffold on which elevator employee was sitting astride swung when he reached for a board on the ground. This caused him to strike his hip and sustain bruised muscles.

## Worn Parts Cause Explosion

WORN parts in a large Minnesota feed mill resulted in an explosion of the mill and the death of the employee attending it.

A protruding nail was unnoticed by an Illinois plant manager who ran into it. The nail was just at a height to strike his eye, and the result was a detached retina.

Necessary amputation of his hand was the fate of a Kansas employee when he attempted to hold back the stock while a belt was being replaced.

Insecurely packed sacks of flour fell on a trucker at a Kansas plant and fractured his vertebrae.

## Slippery Floors

WET boards on a landing above the floor level caused an employee in a Missouri plant to fall fifteen feet. Fractured skull, arm and wrist was the result.

While attempting to stop a leak in a grain bin with a gunnysack the material was caught into a screw conveyor, pulled in the hand and crushed the fingers before it could be stopped.

A loosened railing on a manlift gave way in a Kansas plant and sent an employee to the cement floor below, dislocating his shoulder.

Endeavoring to observe the weather conditions through a window while riding up in a manlift, a Missouri plant employee went over the top and the ride ended in a fractured vertebrae, rib and leg.

## Failure to Hang Onto Ladders

A FRACTURED nose and leg, also lacerations were the results when an Illinois elevator superintendent missed his hand-hold on a ladder and fell through the trap door.

# 500 Attend Safety Rally

KANSAS City, Mo., Nov. 8. — Over five hundred employees and employers of Kansas City's grain elevators, flour and feed mills, starch and biscuit factories, seed and soy bean interests, and other grain by-products industries held a highly successful "Safety" conference here today in Edison Hall of the Kansas City Power & Light Company.

Dramatic sound movies from the U. S. Department of Agriculture, depicting dust explosions and the havoc they wrought, were followed by Zeleny Thermometer Company's safety film on the three and one-half million dollar Calumet Elevator explosion in Chicago.

"The Fall Guy," a humorous skit prepared by the National Safety Council and designed to disseminate constructive ideas on the minimizing of falls, followed the above two films.

P. A. "Jimmie" Kier, Superintendent of Standard Milling Company, Kansas City, Kansas, chairman of the program committee of the Kansas City chapter of the Society of Grain Elevator Superintendents, arranged the conference for the over-flowing crowd that sat intensified with the program. T. C. Manning, Uhlmann Grain Company at Kansas City, national president of this progressive

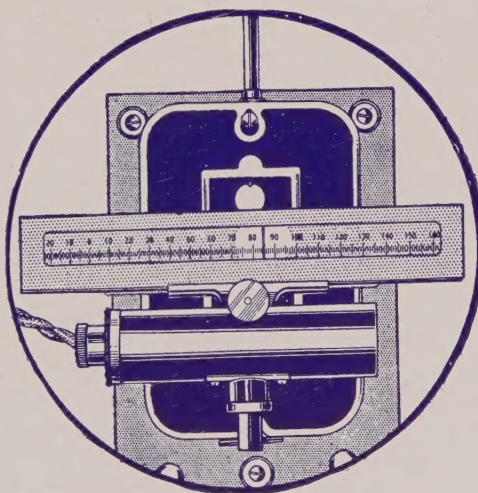
group, introduced the program and its speakers with a plea for better house-keeping, improved alertness and a new-born consciousness of the safety hazards that invariably arise from carelessness, disregard of safety precautions and "wool gathering."

Claude Darbe, Simonds-Shields-This Grain Company, Kansas City, chapter secretary, gave quite a comprehensive dissertation on all the possible causes of the Calumet elevator explosion, and cited several points from which this disastrous inferno might have gained its initial impetus.

Similar to the hushed crowd that departed after listening to Lincoln's famous Gettysburg speech, these participants left this outstanding meeting with a new vision of their responsibilities weighing heavily but enlightenedly on their respective shoulders, — each determined to put the knowledge gained to use in further protection of lives, properties and businesses.

Members of the Association of Operative Millers were among the welcome visitors attending the showing.

The Chicago, Omaha and Minneapolis chapters of the Society will be the next ones to stage a similar gathering. This association also has a chapter in Fort-William-Port Arthur and elsewhere.



## GRAIN LOSSES

occur when you least expect them. Protect your stored grain with a thermometer system. It never fails to warn you of the danger of heating.

Write for our catalogue.

# ZELENY THERMOMETER COMPANY

542 South Dearborn Street

Chicago, Illinois



# WHY Tolerate



*It Costs You*  
**LESS**  
*Without*  
*Them!*

◆ All Top-Notch Plant Managers Know That Leaky Concrete Extracts *Daily* a Heavy Toll of Profits. Minute By Minute Integrating Elements Of Nature's Forces Against You! Surely Everyone Can't Maintain The Quality Of Their Wheat, For Instance, Without Protection Against The Silent, Unknown Damage That Constantly Threatens Their Crops. Success, Can They?

◆ How Much does it cost You To Grow Grain? When you do give your concrete "Over" what do you find? Are there "gobs" of webs? . . . What's the cost per year for Heat Damage; for

◆ The Winter is coming on. Snow will add their destructive touch to your concrete. Ice will seep into tiny hair-line cracks, expand, flick off particles of concrete. The process repeats itself over and over with each new storm. Even the heaviest Snow literally "chisels in" most

◆ "When Winter comes the concrete is behind" . . . Spring rains will wash away your reinforcing steel. Rust will weaken the concrete. The Cancerous process sets up a high tensile stress.

◆ While all this is happening, you are building "Line" fortifications, particles of concrete are being drawn through your concrete by a magnetic attraction—not just where there are line cracks, but through every pore. The spots are the result of a "Stress

**BEN J.**  
**30 NO. LA SAL**



# LEAKS?

Know That  
Ever-Increase  
The Disin-  
All Joining  
"Super" Men  
cially-Binned  
er Protection  
oration That  
es For Suc-

to turn your  
se the "Once  
mossy, vine-  
s it Cost You  
Burnt Grain?

and Ice will  
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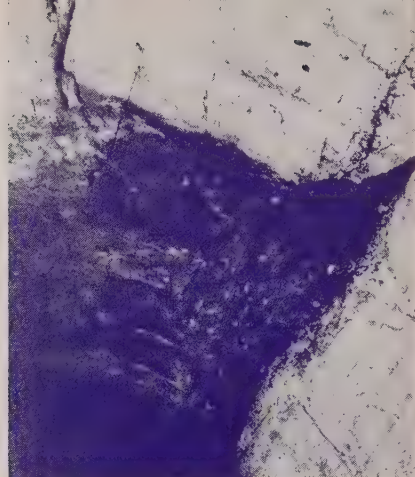
the pouring of the concrete, lunch-hour, a change of shifts, a rainstorm, incorrect aggregates or mixes, etc. Whatever the cause, however, it stands to reason that practically every concrete plant known has reason to be subject to such "sponge-like" porosity, doesn't it?

◆ What to do? Study over *all* known methods of Weather-proofing, good and bad, cheap and costly. Call in a B.J.M. technically trained engineer to consult with you *impartially* (and he'll be glad to help you, whether we do work for you or not). Then consider what you *need* and what you *want*. Naturally you want a "Maginot Line" against either a "Blitzkrieg" or a *prolonged attack* by the ravages of nature; you want a *flexible, skin-like* (that heals in case of a break) coating that *contracts or expands* like a clenched fist or an outstretched hand, don't you?

◆ Costly? Does it pay to have other than the best Doctor reset your broken arm? In a short period of time the higher priced experience, *skill* and *materials* are always cheaper. So with B.J.M. Weather-proofing. You simply can't do better—from either a price or satisfaction standpoint.

◆ And an annual check-up, such as the safeguard you give your own *personal longevity*, is just as sensible for your *meal ticket*, isn't it? Can you afford to take chances with your stored grain—dollar for dollar? Then WHY tolerate leaks? It COSTS you LESS without them!

◆ A post card will summon your "Concrete Doctor." In case of emergency, just phone CENTRAL 7335. Call us today—Your friends do!



Concrete restoration and waterproofing, perhaps the most widely suffered structural ailment about which the layman knows the least, is another point of vantage of dealing with our consulting engineer.



Settling and movements can very definitely be arrested—just as was done in the Malt-house pictured above.



Foundation underpinning, structural alterations and high pressure leaks must be thoroughly and exhaustively planned for and their execution or correction meticulously engineered for lasting satisfaction.

**B. J. M. CORPORATION**  
**CHICAGO, ILL.**



# Property Maintenance

By J. W. THOMPSON\*

(Concluding Installment)

## Exterior Painting

LET us pass now, to the exterior problems of your plant. They are many and it is my intention to avoid mentioning of such factors as proper painting of wood and metal because they are quite commonplace. Practically all are vitally interested in waterproofing and the preservation of existing concrete surfaces, be they reinforced buildings or tanks.

That there is a tremendous need for suitable waterproofing materials to be used on exterior surfaces cannot be denied.

Concrete grain elevators as well as other concrete and brick structures **MUST** be protected against the elements!

The average structure of this type may stand ten to fifteen years before any consideration is given to the fact that disintegration and crumbling are causing serious damage. At the end of this time, these buildings merit the name of "forgotten structures." The older the building, the more rapid the deterioration generally becomes.

Typical indications that disintegration is occurring consist of small and large cracks throughout the surface area, soft seams, surface spalling, honeycombs, exposed steel and natural wear.

## How "Cancers" Start

THE causes of this disintegration are well known. Access of moisture to unprotected surfaces of this kind causes alternate freezing and thawing, and because of this continued action over a period of years, the variation in expansion and contraction causes the formation of small and large cracks. Mortar falls away from bricks, concrete sloughs away and stucco crumbles. Moisture getting into these cracks then cause corrosion of the steel framework, and it is not long before the elevator or building owner is confronted with the familiar condition known as "cancer." This cancerous condition is a progressive formation of corrosion on steel parts, with the eventual disintegration of the concrete surface inevitable.

Carelessness in construction is another one of the common causes for early exposure of steel framework to corrosion influences. If properly constructed, the steel framework of an elevator or other building will be protected with a three-inch layer of concrete. However, too many times the pouring of this concrete is taken for granted.

Improperly mixed concrete contains a large proportion of aggregates. These

aggregates become more familiar to us when we describe them as small or large balls of improperly mixed material. These get behind the steel framework and bulge it or push it out nearer to the surface of the concrete covering so that in many cases instead of having a three-inch protective layer, we have a one inch layer. Needless to say, this thin layer is insufficient.

Another cause of disintegration of concrete is again due to poor construction methods. Pouring concrete seems like a relatively simple operation, but when poured in sections the operation is always accompanied by the formation of a scum or pulpy gelatinous fluid which forms on the top of this poured section. When the next section is poured directly on this, the bond between these two sections is very poor and always results in a seam that is soft and subject to very early disintegration. The experienced operator will always cut this seam away by thorough wire brushing so that the succeeding concrete pours can bond thoroughly to the previously poured section.

These are the more common causes for the disintegration of exterior concrete surfaces. There are others, but what we have briefly mentioned should serve to indicate that too much care cannot be exercised in an effort to control the action of these disintegrating forces.

## More Economical To Build Right

ONE need only investigate the methods ordinarily used for repairing defective surfaces due to the above causes in order to satisfy himself that it would have been far more economical to exercise proper care in the construction and protection of the elevator or other structure before repairs become necessary. Careless methods and incompetent contractors who claim to know much about the repairing of concrete have done much to place this operation in the "patent medicine" class in years gone by. One thing contributing most to this condition is the use of inelastic patching materials.

Large cracks are always cut out to remove the disintegrated portions of the surface. These cuts should be made at right angles or nearly so and the cut-outs then filled with the non-shrinking cement into which a certain amount of iron oxide has been incorporated, depending on the size of the patch. The soft seam caused by the improper pouring of concrete must be dealt with in the same way.

When dealing with small cracks, the choice of a proper mastic cement controls the ultimate success of this operation. Only experience can dictate what this cement should be.

Spalling, probably more familiarly known as "sloughing off or scaling away," of concrete surfaces may either be due to corrosion of the steel frame or the improper pouring of the concrete. Corroded steel that has appeared on the surface must either be cut out entirely or the concrete must be removed behind it so that it may be put back into position after which the proper three inch protection of concrete can be applied.

## Proper Maintenance Saves Money

THESE facts all serve to show that protecting the surface of what is now the "Forgotten Structure" would not only have resulted in an enduring good appearance, but it would have made unnecessary the expense of major repairs.

Avoiding these costly major repairs simply means that after an exterior concrete surface has properly aged for approximately ten months it should be coated with a properly designed exterior waterproofing paint. If this is not done and major repairs become necessary, protecting the patched areas and preventing further disintegration become important problems which can only be solved by waterproofing.

Concrete chimneys, storage bins, elevators, bridges, abutments are but a few of the surfaces upon which a waterproofing system can be used to advantage.

The ideal waterproofing system is one which keeps moisture out, but permits moisture to slowly pass from the inside outward.

The concrete surface that has normally aged for ten months can be waterproofed for approximately 6c per square foot because no extensive repairs are required. The concrete surface that has stood approximately ten years requires extensive repairs and the cost of waterproofing is therefore around 12c per square foot upwards, 4c of which covers the repair cost and the remainder representing the cost of painting. The structure that has stood twenty-five to thirty years without proper attention requires more extensive repairs and the approximate cost of waterproofing is 20c per square foot, upwards, 12c of which covers the cost of repairs.

In addition to the economy of waterproofing the exterior of an elevator or



other structure there is also the decorative value of painting these exterior surfaces.

### "Eye Openers" For Safety

WE come now to a few of the miscellaneous uses of paint as they pertain to safety. Chiefly through color, attention of the employee is immediately attracted to those surfaces or those objects in whose vicinity caution should be exercised. Such uses of paint are generally referred to as "eye openers to danger."

The American Standards Association has been advocating the use of various color schemes for the quick and positive identification of pipe lines. To be of greater assistance to individuals or firms to whom this idea would appeal, a permanent organization has been established and it is only necessary to communicate with the National Safety Council at 20 North Wacker Drive, Chicago or The American Society of Mechanical Engineers at 29 West 39th Street, New York City.

There are several types of industries represented by the readers of "GRAIN," all associated with "the Kernel" in some form. Each industry has a color scheme characteristically its own. It is the ultimate goal of the American Standards Association that each industry in time to come will be standardized in such a color scheme so that regardless of whose paint it be or wherever it is located, the set-up will be identical.

### "V" Strip Your Belt; Ground Static

FOR precautionary measures, the banding of your belt with vivid stripes of yellow at spaced intervals will tend to attract attention when the belt is moving. Thus the employee is warned before attempting to cross over it and the resulting accidents attributed to this cause will be diminished or even eliminated.

It is well to so finish the man-lift in such a manner as to attract the attention of the employee to the proper locations to reach for his hold.

Static electricity is an ever lurking hazard and no precaution taken is too costly to reduce or eliminate this danger. Therefore the painting of machinery wherever such unit has any tendency to develop static electricity with metallic base paints is wise. A ground will be provided to a great degree.

Moving machinery and especially electrical equipment offers a hazard at all times regardless of safety devices that may now be in use. Were such dangerous locations outlined by painting the floor area with bright colors, the attention of the employee is immediately attracted regardless of where his thoughts may be at the time.

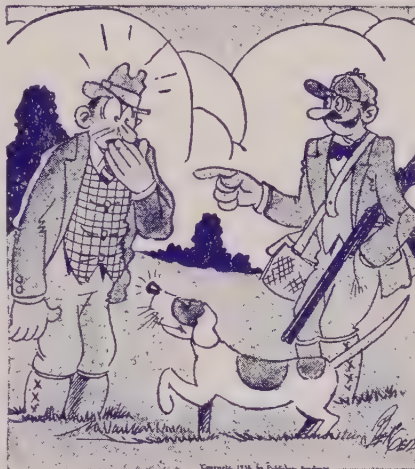
Out on the track shed, provide the

necessary illumination to the steps. Also use a little vivid color to show the clearance of a car.

### Good Fire Precaution

FIRE apparatus such as extinguishers, sand pails, empty pails, etc., have long been finished with a red. Have you ever noticed how dingy these objects become after a period of time? Do you suppose in your own plant there could be any possibility of any employee not knowing the location of these devices? Do you suppose this same employee, if there be one, might have passed these objects time and again without having had his attention attracted to them merely because the color background did not command his attention?

A movement is afoot to break loose from this age old, dead, red idea. It can be brightened up. This suggestion is offered for your consideration.



You can't fool that dog, Joe—you've had quail for lunch. Courtesy Chicago Daily News

On columns, paint the area behind the extinguisher and around the column with five six-inch wide stripes of orange and red, beginning with orange and following alternately with red and orange.

On the walls, again use five alternating stripes of orange and red to form a panel behind the extinguisher of a size approximately 18 x 30 inches. Here again the stripes should be about six inches wide beginning with orange and following alternately with red and orange.

From what we have already discussed, I trust you are impressed with the need for a more thorough knowledge and control of maintenance as a whole. Unless such a program is undertaken, instead of dealing with "maintenance costs" we are eventually confronted with "replacement costs."

\* Mr. Thompson is Western Manager of the Maintenance Division of the Pittsburgh Plate Glass Company.

## WHO SHALL MANAGE?

Henry Ford says:

"A monopoly of jobs in this country is just as bad as a monopoly of bread!"

In an effort to dictate the management of the Ford industry, Mr. Ford puts it this way:

"If union leaders think they can manage an automobile factory better than we can, and pay better wages under better working conditions than we can, why don't they build a factory of their own and show us up? They have the capital — they have all the money they need and a lot more. The country is big; they have the men; and think of all the union customers they would have!"

"If the union leaders are sincere, they should go into business themselves. If they have thought out a better way to manage business, let them demonstrate what it is. If they can't do that, why do they pretend they can?"

There are two groups attempting the control of labor, one distinctly more radical than the other. Industry will incline to the one that has not adopted communistic ideals and contempt for private ownership.

### YOU KNOW ITS TRUE!

If you are poor—work.

If you are rich — continue to work.

If you are burdened with seemingly unfair responsibilities—work.

If you are happy—keep right on working. Idleness gives room for doubts and fear.

If disappointments come — work.

If sorrow overwhelms you, and loved ones seem not true—work.

When faith falters and reason fails—just work.

When dreams are shattered and hope seems dead—work. Work as if your life were in peril. It really is.

No matter what ails you—work.

Work faithfully — work with faith.

Work is the greatest remedy available.

Work will cure both mental and physical afflictions.



...dust  
CAUSED  
THIS



Protect WITH

Complete  
**DUST  
CONTROL**  
Systems

**ALFRED C. GOETHEL CO.**  
2337 NORTH 31<sup>ST</sup> STREET  
**MILWAUKEE, WISCONSIN**

**MANUFACTURERS....ENGINEERS**

### CHEMICAL ANALYSIS OF DUST?

"CAN you tell me the chemical analysis of grain dust," asks W. E. Coufield, Chicago. "It would be interesting to know the percentage of nitrogen and other explosive material which grain dust contains. I have never heard of such a test but you may have.

"There has been such a lot of interesting things printed in 'GRAIN' since I last dropped in that I want to discuss many of them. (This is the first time I have had a pen in my hand in nearly a year.)"

#### *Yes, Nitrogen IS Present*

THE chemical elements that are almost exclusively responsible for the explosibility of grain dusts are carbon and hydrogen, however the small amount of nitrogen that is present is not in an explosive form. In fact, reports Paul W. Edwards, Chemical Engineering Research Division of the U. S. D. A., Washington, it acts as an inert material and reduces to some extent the explosibility of the dust.



### ELEVATOR HANDLED FIFTY TIMES ITS CAPACITY

IN 1924 there was a bumper crop and in that season there was a great pressure of export grain, and the one elevator at Vancouver, B. C., with a capacity of only 1¼ million bushels, handled 55 million bushels during the season. It was working day and night at full capacity, and doing things which would, under the present Grain Act, be entirely illegal.

Those of us who went through that experience do not want to see a repetition of the conditions which accompanied the export of grain at this port that year. There were frequently as many as twenty ships lying at anchor in the harbor waiting to get into the elevator berth, and a special body had to be set up to determine precedence for the many vessels waiting to load. Arbitrations and lawsuits resulted in many cases. Some ships had to wait five weeks to get their grain.

Demurrages piled up, and the load of grief which shipowners and exporters alike had to bear was such that none wished to repeat.

Never before had any elevator in the world handled so great a quantity of grain in a season, nearly fifty times its capacity, and never has such a record been even approximated. The high-pressure operation and extraordinary total volume resulted, no doubt, in a profit on operation, even at the reduced rate. But the loss suffered by the ships must have been far greater than the profit to the elevator.—*Vancouver Harbour and Shipping.*



# CO-OPERATION

## *Between Superintendent and Weighmaster*

By M. H. LADD, Chief Weigher, Milwaukee Grain and Stock Exchange

THIS subject is of such vital importance to all of us in the grain trade that many of the principal items will bear repetition, which I will endeavor to do very briefly.

We all realize, of course, the importance of accurate weighing, without which no grain handling plant can be handled efficiently and economically. The terminal grain weighmasters at all of the principal markets are fully aware of the great importance of accurate weighing, and are making every possible effort to eliminate, as far as possible, errors and inaccuracies in weighing, and the past several years have seen wonderful strides in this direction. Scales and grain handling equipment, as well as weighing methods, have constantly improved, and these improvements will probably continue so long as grain is weighed.

I might add, in this connection, that the Terminal Grain Weighmasters, as well as the Scale Men, hold annual meetings, such as the meeting in which you Superintendents and Managers participate. Our problems are discussed thoroughly and much good is accomplished through the mutual exchange of ideas. It is our constant aim to insure reliable weights to the shipper, the processor and the consumer of grain and grain products.

The Elevator Superintendents and the Weighmasters have one objective in common, and that objective is "Accurate Weighing." To attain this objective the elevator operators and the weighing agencies must co-operate to the fullest possible extent.

### *Good Housekeeping and Weights*

ONE of the most important items in this co-operative plan is "Good Housekeeping." No machine (and that includes the scales on which grain is weighed) will function properly and give accurate results if not kept clean. Dirt is one of the worst enemies of accurate weighing, and no scale will operate correctly if the vital parts are filled with grain dust. Let me urge that you Superintendents keep your scales clean at all times and not wait for the Scale Inspector to tell you that they are dirty. This applies to all scales used in weighing grain, whether they be car-capacity hopper, R. R. track or small sack-ing scales.

In addition, the equipment for handling grain between car and hopper scale is of great importance. All legs, boots and spouts must be "grain tight" otherwise there is certain to be a loss of grain. This calls for frequent inspections by the elevator operator and the weighmaster.

Then comes the equally important matter of recording the weights accurately and correctly; consequently, only accurate and reliable men should be assigned to this important work.

Fortunately, all modern grain scales are equipped with type recording attachments to the beam, which reduces the possibility of error in reading the beam to a minimum. Nevertheless, there is still opportunity for error, and extreme care should be exercised in selecting the man for this important work.





## THE CALUMET

(Protected by U. S. & Foreign Patents)

**Increased Capacity  
Perfect Discharge  
Superior Wearing Quality**

We can also furnish these buckets in a new rustless, non-sparking metal for flour and soft feed. Less than one quarter the weight of steel and at a fraction of the price of standard stainless steel.



We handle a complete stock of  
Norway Flathead  
Bucket Bolts  
and Spring Washers

## B. I. WELLER

SOLE OWNERS of the patent and SOLE Licensed Manufacturers in the U. S. under this patent.

327 S. La Salle St., Chicago, Ill.  
220 W. Chicago Ave., East Chicago, Ind.  
R. R. HOWELL & CO., Minneapolis, Minn.,  
Northwest Distributors

STRONG-SCOTT MFG. Co., Ltd., Toronto, Winnipeg, Calgary  
Licensed Manufacturers for the Dominion of Canada



## Baltimore Swamped

OLD Baltimore is booming in handling grain at the present writing, writes Frank A. Peterson, Norris Grain Company Super. Soy beans, wheat and corn are coming in large doses at all three export houses, and a Dutch ship loaded recently taking a full cargo of soy beans.

The elevators have been put in shape to take on all that can be shot at 'em and are rarin' to go. Really looks like war times, too, with all the ships carrying a large flag and with the ships' names and countries painted on both sides and on deck.

Tough on our own ships. I saw eight large cargo boats at the docks and all were foreign register. We on the coast get some idea of happenings in the world of shipping by just taking a trip along the water front. Piers are filled with cargoes awaiting shipment, and bawling tugs are hauling big freighters in and out all day long.

Was down to Newport News to look over my old stomping ground. All is well with the old town and the ship yard is snowed under with work. The yard employs 9000 men right now.

Makes a fellow feel jittery inside to see all those fine ships knowing that some of

them will never see the other side and home again. The crew go about their businesses calmly, but I guess that changes when they get out to sea, never knowing when they will be stopped and maybe sunk.

Looks like soy beans will take the place of wheat in some parts of the country. By the way, how many bushels can be grown per acre and how are they threshed out? (Based upon the November estimates the yield this year is the highest on record and reached 20.6 bushels per acre, due primarily to better varieties, growing familiarity with combining and consequently less shattering. Only wheat production is more profitable. The crushing capacity was increased to 80,000,000 bushels this year.)

Took a swing out in the country and observed a lot of wheat fields. The majority of them show a fine stand for this early (November 15th) in the season. Barley fields are best of the two, showing up like a great green carpet.

I thank you for the way you set up my article on the bay boat end of grain handling in Baltimore. Mr. Keller liked it, too.

### PASSING OF JOHN J. MURPHY

THE many friends of John J. Murphy mourned his death on November 2nd. Mr. Murphy had been barley buyer for Albert Schwill & Company Chicago, for some time and was well known throughout the industry. Prior to this affiliation John was associated with Bartlett Frazier Company. He started his career in the industry in Milwaukee.



### CORRALING HORSESHOE CHALLENGES

WE hear that some pretty strong claims are being made for the invincibility of some Chicago elevator and processing plant horseshoe pitching teams, and likewise understand plenty of avoirdupois is going to be lost drop by drop 'ere snow flies — with the feud taken up again in the Spring when the warriors can get a toe-hold in the terra-firma.

We learn they had to put barrels over the stakes down at the Kansas City tournament to keep some of the competing teams from making ringers every time. (All right Chicago, its your turn to brag!)

### OUR VISITORS

WE. "Bill" Coufield, Number One joiner of the SoS, dropped in on us after a four months illness, looking tip-top and ready to go after that job advertised down in South America. After being retired for several years following the destruction of the Goose Island elevator he was operating, Bill, formerly General Superintendent for Armour Grain Company, still is as full of pep and vinegar as ever. Lots of luck, young man!

Norman Boadway of Collingwood (Ont.) Terminals, Ltd., graced our hole in the wall on Halowe'en. Says all the boys around the Georgian Bay and throughout eastern Canada can hardly wait until the Toronto convention opens up, and that they are looking for a Chapter to be formed following this affair which will doubtless meet quarterly.



### LIKED SAFETY NUMBER

CONGRATULATIONS on the fine set-up of your Safety Number," writes F. A. "Pete" Peterson of Norris Grain Company, Baltimore. It looks awfully good to me."

### HARD TO INTEREST SUPERS?

YOU are doing a wonderful job," volunteered a letter recently received, "for every issue of "GRAIN" is jammed full of items of direct interest to your readers.

"For the life of me," the message continued, "I think the Supers are about as hard a group to interest in anything as there is any place; they just don't seem to enthuse about anything, whether it be their own Safety Contest or anything else. In fact, I should think that many of them would feel guilty at the little help they are giving you on 'Grain.'"

(Well now maybe we can get a couple dozen more of them started contributing items of interest which, in addition to those faithful correspondents already active, would thus make "GRAIN" just that much better. What say, readers?)

### L. H. DES ISLES BACK

MR. L. H. Des Isles, long president of the Zeleny Thermometer Company, Chicago, has returned to his office after a short siege of illness. "Good Luck, 'L. H.," and good health!"

### IT GETS INTO THE BLOOD

ONE of my first loves is the SOGES and I see no reason for deserting at this late date; in fact, I am looking forward toward the Toronto meeting right now," writes E. J. Martin, Manager of the Norfolk & Western Railway Company Elevator at Norfolk, Virginia. Mr. Martin was elected a director of the G & FDNA in October.

"While I am a railroad man now, my whole life has been mixed up with the grain trade some way and if in my small way I can do anything to better it, it would afford me heaps of pleasure — for I do believe that it is a pretty good business despite all the trials and tribulations experienced in the past few years."

### WALTER NOWAK BUYS MICHIGAN FEED PLANT

ANNOUNCEMENT has just been received that Walter Nowak, formerly connected with the Nowak Milling Company, Hammond, and later with the Vitality Mills, Chicago, has purchased a feed mill at LaPier, Michigan. Walter has always been one of the prominent members in the Chicago Chapter of the Society of Grain Elevator Superintendents, and the other members are urging him to retain that membership and continue to attend their regular meetings.



## DAMAGE UP TO 75%

**W**EEVIL are threatening serious damage to farm-stored wheat in many sections of the state, advises J. F. Moyer, Secretary of the Kansas Grain, Feed & Seed Dealers Association. Infestation has shown up in from 15% to 75% of the bins examined according to reports of inspectors, so all handlers should use extreme caution and inspect closely wheat they are receiving as infested grain dumped into your elevator could cause heavy losses to your stock.

Grain you have in your elevator, the report continues, should be turned frequently and inspected closely for weevil, and if seriously infested, your bins and entire plant should be treated with an effective fumigant.



## NEW SOY BEAN RECORDS

**A**LL previous production records for soy beans have been broken this year. Lamson Brothers' crop statistician estimates the total crop at 83,000,000 bushels, and the Bennett report fixed the crop in six leading states at 73,700,000 bushels. Last year's production was 54,000,000 bushels in the six middle west states and 57,000,000 bushels for the country.

It has been a record-breaking season for this crop in other respects also, export sales having been by far the largest ever known, while the movement has also exceeded any other year by a wide margin.

Chicago receipts alone during October, 1939, totalled 10,138,000 bushels compared with 4,672,000 bushels in October, 1938. Shipments last month were 4,705,000 bushels compared with only 1,355,000 bushels in October, 1938.

## Export Sales Soar

**E**XPORT sales have been estimated as high as 10,000,000 bushels and this business, stimulated by the war conditions which have made it difficult abroad to secure Manchurian beans, has been the dominating feature of the trade. Due largely to effort of exporters to cover their sales, the huge receipts at Chicago have been absorbed readily, and it is expected that shipments from Chicago between now and the close of navigation will be heavy.

Probably the most satisfactory phase of the situation from the stand point of producers is that the record-smashing crop and the huge movement prices have advanced to and held high levels. In other years during the early marketing period prices have declined under the hedge load. At the present time, prices are only about 2c off from the extreme top. Bean prices are now quoted in the nineties on the Chicago Board of Trade while wheat is in the eighties, with corn hovering a little above the 50c mark.

The rapid expansion in soy bean production is especially significant in that there has been no artificial stimulation for production, no acreage restriction, no loans and no bonuses. This would seem to indicate that a free and unrestricted market works out more to the advantage of the farmers than where the trade is hampered by undue regulation. Another significant feature is that the consumption has kept pace with the year-to-year increases in production. Uses for bean products are becoming almost as manifold as are the uses for corn.

The state of Illinois is maintaining its preeminence as the leading soy bean producer, the crop in this state being placed at around 42,000,000 bushels, or more than half the entire output of the country.

## Worried about WEEVIL?

Read these **RESULTS** of  
**TWO TYPICAL GRAIN FUMIGATIONS**

using **Larvacide**  
CHLORPICRIN

**S**OFT wheat, in concrete bins. Job done with simple application of 2 lbs. of LARVACIDE per 1,000 bushels, plus a little extra top and bottom. Treatment as described in detail in LARVACIDE Literature — FREE on request.

Insect Count prior to Treatment:	Sample No. Live Count		Sample No. Live Count*	
	(2-quart samples taken from belt by handfuls every few minutes)			
	1	2	1	100
	2	5	2	50
	3	0	3	75
	4	1	4	150
	5	4	5	22
	6	6		
	7	0		
	8	50*		

\* Necessarily approximate

Insect Count at time of Pulling (2-quart samples taken from belt by handfuls every few minutes)	28 samples drawn		8 samples drawn	
	No live insects found		No live insects found	
	Date	Live Count in 28 Samples	Date	Live Count in 8 Samples
	Nov. 17	0	Nov. 27	0
	Nov. 27	0	Dec. 11	0
	Dec. 11	1	Dec. 26	4
	Dec. 26	0	Jan. 8	0
	Jan. 8	0	Jan. 22	0

Note the weevily condition of these bins, prior to fumigation, particularly in Case 2. This treatment justified the small expense incurred many times over by bringing insect damage to an abrupt halt, and saving the cost of several turns to reduce the temperature below the point where insects are active.

Results as secured above are your best evidence of a THOROUGH job. These emergence tests indicate a kill of egg life which means that repeated fumigations are unnecessary.

**F O R M O T H** — Sprinkle or spray surfaces of standing grain according to instructions. **TREAT BIN BOTTOMS** — In running grain into bins suspected of infestation, sprinkle up to a quart into bin bottom with first few bushels.



For **RODENTS** — Light applications as directed. Rats and mice die in the open. No carcass nuisance. Traces of gas, lingering in burrows and similar retreats, guard against reinfestation for a long, long time. Write for new folder on Effective, Economical Grain Fumigation, pictured at right. It's FREE, of course.



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## Who's Who in Supers' Society

WHO'S who in the Superintendents' Society since the last list was published? Well here's the honorable parade:

- 414—J. E. Grant, Canada Malting Company, Winnipeg;
- 415—B. Armstrong, Assistant Super, CPR Elevator, Port McNicoll, Ont.;
- 416—C. E. Grossman, and
- 417—J. G. Hinthner, Union Equity Co-operative Exchange, Enid;
- 418—Emil Prinz, Prinz & Rau Mfg. Co., Milwaukee;
- 419—Walter Moraw, American District Telegraph Co., Minneapolis;
- 420—Earl W. Homan, Horner & Wyatt, Kansas City, on transfer from O. H. Horner, deceased;
- 421—Wm. J. Rice, Wyandotte Elevator, Standard Milling Co., Kansas City, Kan.;
- 422—Ward E. Stanley, Great Western Elevator Company, Kansas City, Kan.;
- 423—H. S. Probasco, Imperial Belting Co., Kansas City;
- 424—Pat B. Guminger, and
- 425—C. B. Chinn, Jr., C. & G. Brake Lining & Bearing Co., Kansas City;
- 426—Roy L. Herod, Langdon Supply Co., Kansas City, Kan.;
- 427—Herb D. Hart, Bunting Hardware Co., Kansas City;
- 428—E. A. Josephson, and
- 429—C. G. Franks, Albert Schwill & Co., Chicago;
- 430—Earl M. McDonald, The National Refining Co., Kansas City;
- 431—Eric Matson, Cargill, Inc., Kansas City;
- 432—W. S. Collins, Collins Electric

Co., Minneapolis;

433—Louis Ambler, The Glidden Co., Chicago;

434—Vasile Antoniu, Weller Metal Products Co., East Chicago, Ind.; and

435—William H. Laird, Marsh & McLennan, Minneapolis.

### Came Back Into Fold

And here are those who came back into the fold during the past six months:

132—William Whiting, Santa Fe Elevator Co., Chicago;

180—Sandy Keir, Arcady Farms Milling Co., Chicago;

37—P. F. McAllister, Screw Conveyor Corp., Hammond, Ind.;

250—Jack Waterbury, Santa Fe Elevator Co., Chicago;

98—C. C. Gray, Superior Separator Co., Minneapolis;

108—Alfred Shuler, Huntley Mfg. Co., Minneapolis;

187—Ray Mons, Benjamin Electric Mfg. Co., Chicago;

204—Ed. J. Raether, Assistant to the Secretary, Chamber of Commerce, Minneapolis;

374—Arnold Myers, Cleveland Grain Co., Chicago;

175—Emil Buelens, The Glidden Co., Chicago, and

193—A. D. McPherson, Huntley Mfg. Co., Chicago.

And we hear tell from the Superintendents' Chapter Secretaries that we'd better start printing on rubber pages because they expect to stretch our columns with reinstatements and new members during the coming 1939-40 winter meeting series. (We've ordered the rubber, boys.)

### K. C. BOYS GOBBLE

OUR November meeting started off on the 16th with grand turkey and all the trimmings, advises Claude Darbe, Simonds-Shields-Theis Grain Company, Chapter Secretary. We had a fine speaker scheduled and I will write you the results later.



### MORE POWER

"GRAIN" is honestly a dandy. Your layout and selection of type, the use of color and your editorial content are all beyond reproach. More power to your strong right arm!—W. D. Keefer, Director, Industrial Division, National Safety

### GARDNER TO PHILADELPHIA

ROBERT L. GARDNER of Winnetka, Ill., long time representative of the Fiske Bros. Refining Company, manufacturers of "Lubriplate," and a well known figure in the Chicago Chapter of the Superintendents' Society, has joined the Valvoline Oil Company of Philadelphia. "Remember me to all my good friends in the industry," he writes.

"Good luck, Bob, and come back and visit us," says C. J. Alger of Corn Products Company, President of the Chicago Chapter on behalf of all the boys.

### K. C. HORSESHOE WINNERS

AFTER the most successful horse shoe pitching contest put on through the encouragement of Gilbert Schenk of Weevil-Cide Corporation, Grover Meyer of Kansas City Power & Light Company, and John Heimovics of Great Western Manufacturing Company, last Spring, the Kansas City Chapter just concluded a second meet that even outshone the first.

Wives and families were on hand to cheer the players and the contest was a merry mad melee of competitive fun and sport. Mr. Schenk had "eats" on hand for everyone and what a time everybody had.

Winners of this fall tournament were: (1) O. B. McCall and Frank Mayer of Hart-Bartlett-Sturtevant Grain Company's River-Rail Elevator; (2) A. L. Nealey and Wayne Anderson of Norris Grain Company's Burlington Elevator, and (3) W. F. Kuhn and Ernest Womble of Simonds-Shields-Theis Grain Company's Rock Island Elevator. Last time Davis-Noland-Merrill Grain Company's Santa Fe Elevator team took first prize, Uhlmann Grain Company's Katy Elevator team second, and Hart-Bartlett-Sturtevant Grain Company's River-Rail Elevator third.



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Superintendent-Buyer: — Experienced in handling all varieties of wheat and coarse grains, domestic, milling and export. Specialized in barley, oats and rye past three years. Go anywhere. Best of references. Address 39M1.

Millwright: — Thoroughly capable and experienced. Handle any sized job. Willing and reliable. Address 39M2.

#### Positions Available

Construction Superintendent: — Give experience and references, salary and availability to leave country. Address 39M3.

Elevator Superintendent: — Opening in South American million bushel corn plant. Would expect contract for term of years. Advise monthly compensation (American money) expected. State experience, give references, age, etc. Address 39M4.



## SUPERS GUESTS OF HOWELL

**A** WELCOME that allowed no doubts as to its heartiness greeted the Minneapolis Chapter Superintendents and their friends on October 31, when they were the guests of the R. R. Howell Company at their plant.

That the party was a great success was reported by all the forty eight who attended, and before the evening ended G. L. Patchin, of the Appraisal Service Company, voiced the unanimous thanks of all to the Howell Company for extending the invitation to them.

Among the other speakers were Ed Raether of the Minneapolis Chamber of Commerce, and Paul Christianson of the Monarch Elevator, who talked of memberships in the SOGES. Jack Coughlin, Brooks Elevator Company told of the meetings and entertainments to come.



Tuberculosis is still the greatest killer of youth . . . and takes fifty per cent more girls than boys between the ages of 15 and 25!

Two modern aids that help the physician detect tuberculosis in its earliest, curable stage are the tuberculin test and the chest X-ray.

Your purchases of Christmas Seals make it possible, not only to teach people that tuberculosis is preventable and curable, but to look for early stages of this dread disease among children who seem to be in good health.

So from now 'til Christmas, mail no letter—send no package—unless it is decorated with the Christmas symbol that saves lives!

The National, State and Local Tuberculosis Associations in the United States



**BUY  
CHRISTMAS  
SEALS**

## WOULD RENEW PROMPTLY

**W** E would appreciate very much your advising us of the expiry date of our subscription to your magazine. We would like to have a record of this so that we would be able to renew it promptly when it runs out. — M. E. Vipond, Roe Farms Milling Company, Atwood, Ont.

## IMPORTANT APPROACHING DATES

April 1-3. 11th Annual Convention, Society of Grain Elevator Superintendents, Royal York, Toronto.

May 10-14. National Fire Protection Association, Atlantic City, N. J.

## A FAR OFF RUMBLING

**W** HEN a convalescent sits up and takes notice of things going on around him, it's a sure sign that the old constitution is getting back to normal again. In this particular case we refer to Mr. Frank Beyer, who writes from Fort William:



"I see the next meeting place will be Toronto and am pleased, as Jim Shaw—one of the old war-horses and a great booster for the Society—had it coming to him."

Speaking also of Jim Mackenzie (Three Rivers,

Que.), Frank says:

"I know both Jims and am sure the members of the Society of Grain Elevator Superintendents can look forward with confidence to a bang-up Convention next April. They are both 'live wires' and it won't be long before you hear a big rumbling noise which will be the signal—What are we waiting for? Let's go!"

## WILLIE EVERLEARN



## CHICAGOANS TO DANCE; TRAVEL

**T**AKING a leaf out of the successful book of events on the respective calendars of the Minneapolis and Kansas City Chapters, the Chicago boys are arranging a dinner dance party for Tuesday evening, January 9th, at the Redwoods—next door to the large plant of the Arcady Farms Milling Company in Riverdale. Wives and friends will be most welcome, reports President C. J. Alger of Corn Products Refining Company.

One of the two new elevators recently built will be "inspected" in the afternoon provided either is fully equipped and ready to operate by that time, according to Chapter Secretary H. A. Keir of Arcady Farms Milling Company.

The February meeting now calls for an out-of-town trip to Decatur, but whether it's to be Indiana or Illinois hasn't been decided fully as yet.

## ★ THE BIG BOSS SEZ:

**W** ITH the present set-up of Kansas City Chapter officers," says National Society President T. C. Manning, Uhlmann Grain Company, Kansas City, "they will go ahead and make the other chapters sit up and take notice. I was unable to attend the last meeting (the second I've missed since the chapter was started) but I checked up and find they had a very good get-together. There is a better feeling all around since the local chapter has a little money of their own."

How about that, other chapters? Do you accept the challenge?

## ★ O POLITICIANS!

They Jumped on the Grainman  
When things were going swell;  
They took his ordered business  
And with it they raised heck . . .

## ★ WHAT OF THE FUTURE

Back in 1890:—A man who later became President of the United States was running a printing press.

One of America's big Steel Company heads was stoking a blast furnace.

A famous banker was firing a locomotive.

★  
One of the Supers suggests that the letters SOGES should stand for SOCIETY OF GIVING ELEVATOR SUPERINTENDENTS.



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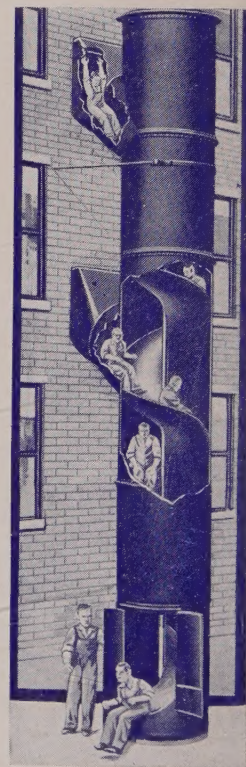
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Typical Installations

Left: Santa Fe Elevator, Kansas City. Above: Simple means of entering chute. At right: (1) Tube-type slide for industrial plants; (2) cross-section of chute.



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